

Apollo

The preparation, handling, and consumption of space foods during the Mercury and Gemini missions provided valuable experience for the further development of space foods for future space flights. The Apollo program used food packages similar to those used on Gemini, but the variety of foods was considerably greater. Rehydratable food was encased in a plastic container referred to as the “spoon bowl.” Water was injected into the package through the nozzle of a water gun. After the food was rehydrated, a pressure-type plastic zipper was opened, and the food was removed with a spoon. The moisture content allowed the food to cling to the spoon, making eating more like that on Earth.

Another new package, the “wetpack” or thermostabilized flexible pouch, required no water for rehydration because water content was retained in the food. There were two types of thermostabilized containers: a flexible pouch of a plastic and aluminum foil laminate and a can with a full panel pullout lid. A disadvantage to the canned products was the added weight, which was approximately four times that of rehydratable foods. With these new packages, Apollo astronauts could see and smell what they were eating as well as eat with a spoon for the first time in space. This added enjoyment to the meals, which was missing in the earlier packages and products. The storage space for the new packaging allowed for one week’s worth of rations for one astronaut to fit in a pressure-resistant container the size of three shoe boxes.

The Apollo missions to the Moon presented an enormous challenge to space food. The Mercury feeding tube was reintroduced as a backup food system. It contained a special formulation rather than the natural food purees used during Mercury. On Apollo flights, foods and drinks were reconstituted with either hot or ambient (room temperature) water. Some of the foods consumed on Apollo were coffee, bacon squares, cornflakes, scrambled eggs, cheese crackers, beef sandwiches, chocolate pudding, tuna salad, peanut butter, beef pot roast, spaghetti, and frankfurters.

Visit <http://spacelink.nasa.gov/space.food> to see and download the Apollo Food List.

These Apollo spoon bowl parts show the complexity and engineering that went into the earlier years of space flight food packaging.



A close-up view of an Apollo spoon bowl package before rehydration and opening. This package was called a “spoon bowl” to differentiate it from Gemini and early Apollo food packages, which required that food be squeezed from a tube directly into the mouth. This type of package resulted in significant improvements in food consumption and crew comfort with food. Hot water was injected to rehydrate the food. The top of the container was opened with a pair of scissors, and the meal was eaten with a spoon.



Apollo meal wrap.

